

## PRIOR ART INFORMATION LIST

your case No.	
our case No.	22956/501356US

Inventor, Patent Number, Country Author, Title, Name of Document	Date/Month/Year	Concise Explanation of the Relevance [ indication of page, column, line, figure of the relevant portion ]
European Patent Application Laid-Open No. EP 1 028 047 A2	Laid-Open date 16.08.2000	Please see the attached reference.
Japanese Patent Application Laid-Open No. 9-308286	Laid-Open date 28.11.1997	<p>Japanese Patent Application Laid-Open No. 9-308286 (1997), similarly to our invention, executes field weakening control to control a motor. More specifically, in the JP Patent Application No. 9-308286, a current command signal generating means outputs a phase leading angle proportional digital address value corresponding to a current norm command and a current phase command, and an address generating means outputs a rotor position proportional digital address value in accordance with an output of an encoder. The rotor position proportional digital address value and the phase leading angle proportional digital address value are added in an address digital adding means. A waveform data of a q-axis waveform memory means is read using an addition result as the address input, and it is then converted into current command signals in the accumulation digital/analog converting apparatus with reference to the current norm command in order to realize the drive through pulse width modulation control of the motor. Moreover, the JP Patent Application No. 9-308286, similarly to our invention, employs an IPM motor as the motor, to take advantage of reluctance torque.</p> <p>The JP Patent Application No. 9-308286 is different from our invention in the following points. In the JP Patent Application No.9-308286, the field weakening control is performed on the basis of a speed instruction or a torque instruction inputted from outside into the current command signal generating means. On the other hand, in our invention, the field weakening control is performed when a rotational speed of the motor comes to a</p>

		predetermined range (an area close to a maximum rotational speed of the motor). Consequently, with our invention, a rotational speed range of the motor can be enlarged.
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JAPANESE GOVERNMENT

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This is to certify that the annexed is a true copy of the following application as filed with this Office.

Date of Application: March 12, 2001  
Application Number: Patent Application No. 2001-069117  
Applicant (s): Koyo Seiko Co., Ltd.

December 28, 2001  
Commissioner, Patent Office  
**Kozo OIKAWA**

Patent application 2001-069117

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[International Patent Classification]	B62D 5/04 H02K 1/27 501	
[Title of Invention]	ELECTRIC POWER STEERING APPARATUS	
[Number of Claimed Inventions]	2	
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[Register Number]	001889	
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[List of Annexes]		
[Name of Article]	Specification	1
[Name of Article]	Drawings	1
[Name of Article]	Abstract	1
[Number of General Authorization]	9810581	
[Proof]	Needed	

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Date of Application: October 16, 2001  
Application Number: Patent Application No. 2001-318584  
Applicant (s): Koyo Seiko Co., Ltd.

December 28, 2001  
Commissioner, Patent Office  
**Kozo OIKAWA**

Patent application 2001-318584

[Name of Document]	Patent Application
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[Title of Invention]	ELECTRIC POWER STEERING APPARATUS
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